

ON FOUR TERMITOPHILOUS MILLIPEDS FROM BRITISH GUIANA*

By RALPH V. CHAMBERLIN

(Plates XXV, XXVI, XXVII)

The types of the new millipeds here described were taken by Mr. Alfred Emerson from nests of termites at Kartabo, Bartica District, British Guiana, in December, 1919, and August, 1920. All three pertain to the Cryptodesmidae in the broad sense, a group of mostly very small polydesmoid forms which in tropical regions appear to be rather numerous and widespread although commonly overlooked because of their small size and obscure habits. A number of species have previously been reported as occurring in termite nests and others in ant nests.

Leuritus gen. nov.

Body consisting of the head and twenty segments.

Head concealed from above by the collum which projects widely beyond it. Antennae moderately long, with the fifth joint much longer than the sixth.

Collum with a broad horizontal border which is divided by radial sulci into twelve lobes. Central region of collum moderately convex and tubercular.

The keels of the succeeding tergites wide and horizontal, the lateral border divided into three areas by radial sulci excepting the fifth, which shows two, and the most caudal ones, which show a fourth lobe in some degree developed. The poriferous keels in respect to lobation not differing from the non-poriferous. Repugnatorial pores minute, situated near caudalateral corner of keels of segments V, VII, XI, X, XII, XIII, and XV to XIX; pores not opening on special cones or lobes and detected with difficulty. Tergites between keels bear-

* Tropical Research Station, Number 141.

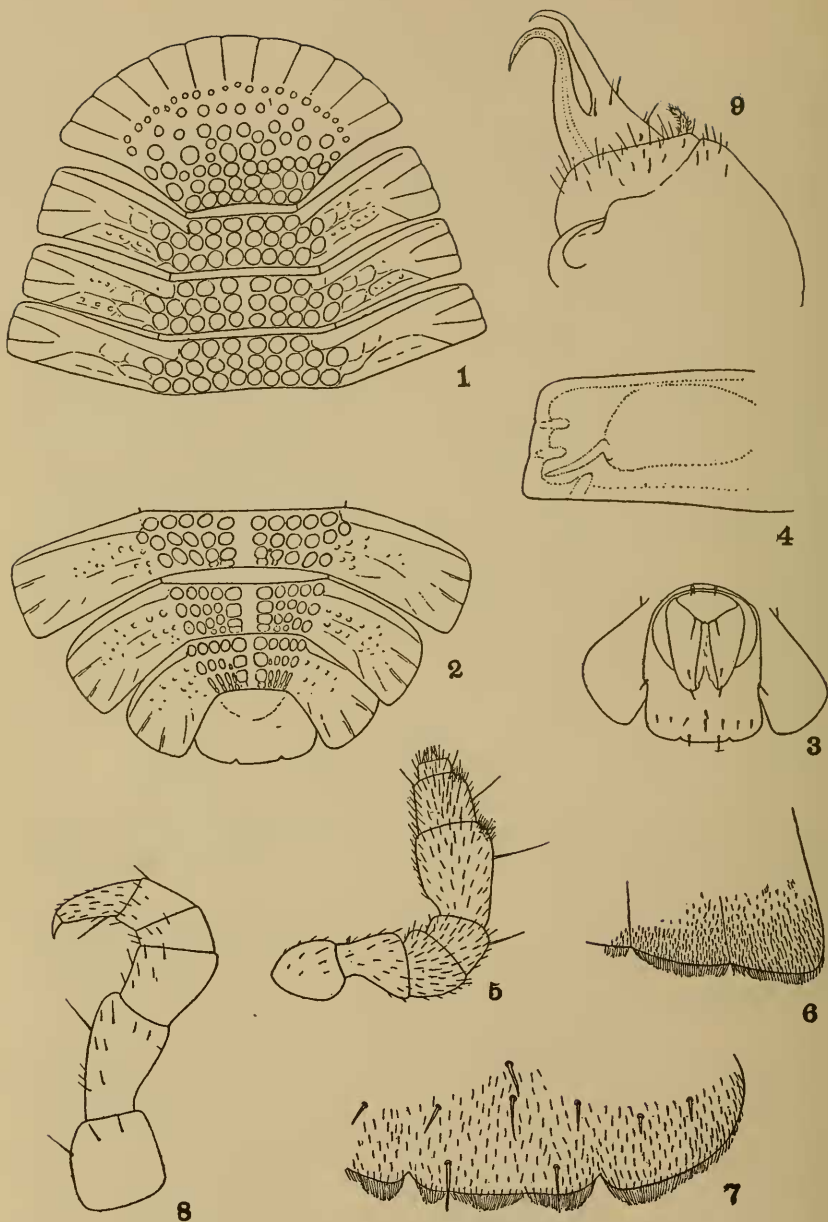


Plate XXV.

GASATOMUS EMERSONI SP. NOV., *TIDOTERUS SEQUENS* SP. NOV.

1, the four anterior tergites from above; 2, the four posterior tergites from above; 3, caudal end of body from below; 4, keel of thirteenth segment cleared and view by transmitted light to show the course of the repugnatorial duct; 5, antenna; 6, portion of collum more highly magnified to show hairs; 7, caudal portion of anal tergite from below under higher magnification to show hairs and setae; 8, a leg; 9, a gonopod of male in subcaudal view.

ing three transverse rows of tubercles, none of them specially enlarged to form more prominent longitudinal series.

Last tergite broad, flat, rounded behind, the margin trilobed; widely surpassing the anal valves.

Second article of legs longer than the third and than the sixth.

Gonopods of male with the basal joint enlarged as usual, but the telopodite extending beyond it and clearly exposed. The telopodite deeply furcate, the two branches slender, smooth and curved.

Genotype.—*Leuritus termitophilus* sp. nov.

In the general form and proportions of the collum and keels much resembling the West Indian genus *Tridesmus*; but the posterior lobes of the poriferous keels are not at all enlarged as in that genus and the caudal tergite is broad and rounded instead of triangular. It is also quite distinct in the structure of the gonopods.

Leuritus termitophilus sp. nov.

(Plate XXV, Figures 1 to 7)

General color flavous, often appearing in part brownish because of adherent foreign material. Surface of tergites densely clothed with very short hairs which are evident particularly on borders of keels and collum. (Cf. pl. XXV, figs. 6 and 7.)

The head is compressed dorsoventrally and presents a sharp transverse edge across vertex and down each side. Sulcus sharply impressed across vertex, furcate below, sending a branch to base of each antenna. A deep groove on each side of the head above into which the basal articles of the antenna fit. Labral margin with three teeth.

Fifth joint of antennal article about two-thirds as thick as long and twice as long as the sixth article. (Cf. pl. XXV, fig. 5.)

Collum depressed, broad; rim broad, with deep radial sulcis, but with the corresponding marginal notches slight; surface within the border tubercular. (Pl. XXV, fig. 1.)

On the keels of the following tergites in general the anterior border is elevated; the lateral lobes indicated by radial furrows but the marginal notches slight or obsolete. Dorsum of tergites between keels densely tubercular, the tubercles not unequally developed in a way to leave longitudinal series of more prominent ones; tubercles in general in three transverse rows on each tergites; the tubercles form also longitudinal rows which on each tergite tend to run ectad of directly forward from caudal end. (Pl. XXV, figs. 1 and 2.) The course of the duct from the repugnatorial gland to the pore is indicated in pl. XXV, fig. 4.

The anal tergite with caudal margin broad, at middle nearly straight, the lateral corners rounded; sides subparallel; surface clothed with very fine short hairs; on ventral surface a transverse series of seven short setae, with two on median lobe caudad of these and one cephalad of them. (Cf. pl. XXV, figs. 3 and 7.)

The gonopods of the male as represented in pl. XXV, fig. 9.

Length, 4.5 mm.; width, 1.5 mm.

Locality.—British Guiana, Kartabo, Bartica District, Aug. 16, 1920. Fifteen specimens, some of which are only partly grown, taken from the nest of *Nasutitermes* (*Nasutitermes*) *brevipilus* (Emerson).

Stenitus gen. nov.

Consisting of the head and twenty segments.

Fifth joint of antennae much exceeding the sixth.

Collum high and convex, with sides steep; the rim depressed and descending almost in line with the sides above it, narrow, with ten areas separated by radial sulci.

Keels of tergites in general short and bent downward, the lateral border of the keels of the second tergite showing three

areas or lobes separated by sulci, the succeeding ones showing only two. Tergites between keels tubercular, the tubercles forming distinct longitudinal rows of which one a little each side of middle and one on each side are higher or more prominent, especially on the more posterior tergites; three tubercles in each row on each segment. Repugnatorial pores minute as in *Leurodesmus*, situated toward posterior lateral corner on segments V, VII, IX, X, XII, XIII, and XV to XIX inclusive.

Anal tergite large and freely exposed, caudally well rounded.

Second joint of legs longer than second and than sixth.

Genotype.—*S. guiananus* sp. nov.

Stenitus guiananus sp. nov.

(Plate XXVI, Figures 1 to 8)

General color flavous.

Median sulcus across vertex of head deep, furcate below, a branch running to each antennal socket. Vertex protruding each side of sulcus and densely granular. Head with a furrow on each side for the reception of the basal joints of the antennae. Fifth joint of antennae less than two times longer than wide and between four and five times longer than the sixth joint. (Pl. XXVI, fig. 7.)

Collum strongly tubercular excepting over the rim. Rim strongly depressed, the radial lines distinct, the corresponding marginal notches not deep.

Keels of the second tergite with marginal notches weakly developed; the notches scarcely evident on following keels when viewed at right angles to their surface, but when viewed obliquely the radial furrow may give the appearance of a marginal notch. Cf. pl. XXVI, figs. 1, 2 and 3.) Four rows of tubercles along the dorsum more prominent, particularly the two submedian ones; two rows of smaller tubercles between each two more prominent rows.

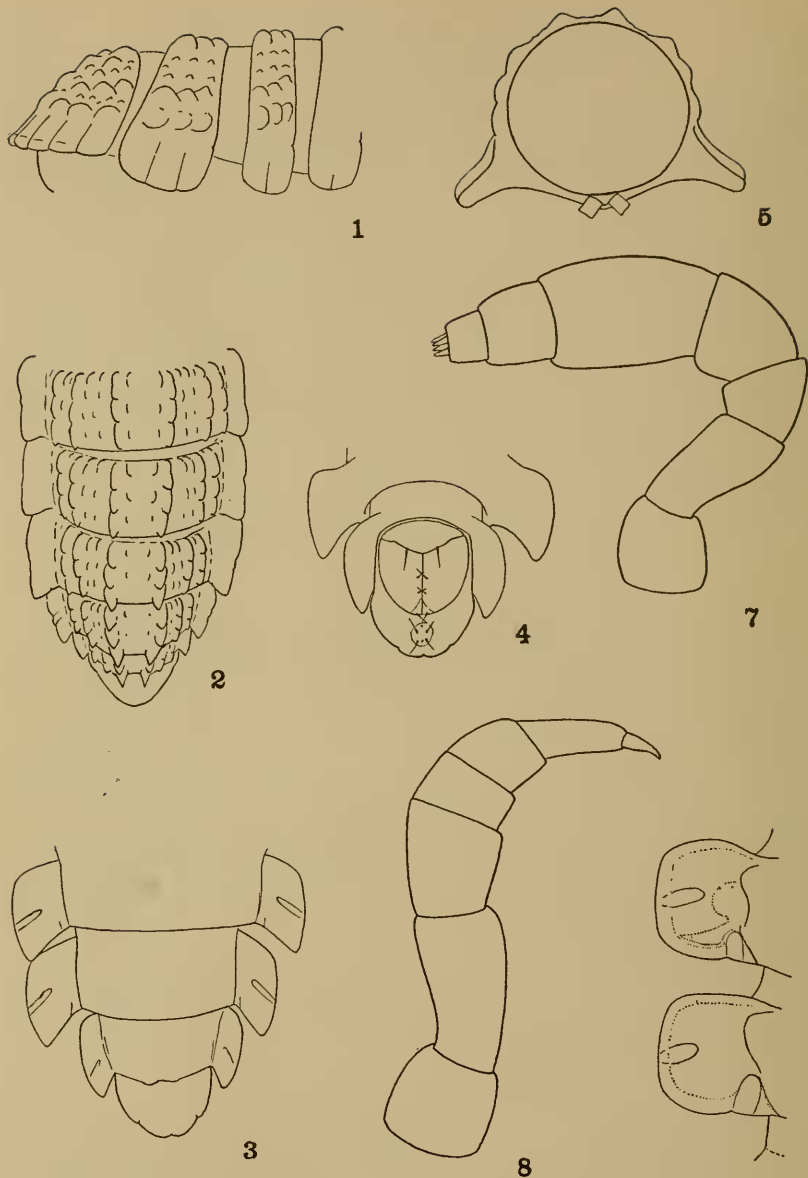


Plate XXVI.

STENITUS GUIANANUS SP. NOV.

1, anterior tergites in lateral view; 2, posterior tergites, dorsal view; 3, posterior end of another specimen in outline, with tergites depressed to bring keels into a more nearly horizontal position; 4, caudal end, ventral view; 5, sixth segment, anterior view, in outline; 6, tenth and eleventh keels viewed at right angles to surface; with course of repognatorial duct indicated on the tenth by dotted line; 7, antenna in outline; 8, a leg in outline.

The anal tergite much exceeding the nineteenth, caudally rounded, the margin notched at median line and on each side as shown in pl. XXVI, fig. 4.

Proportions of joints of legs as shown in pl. XXVI, fig. 8.

Length, 4.4 mm.; width, 7 mm.

Locality.—British Guiana, Kartabo, Bartica District. One adult female, all but the four anterior segments of another, and three immature specimens taken Aug. 16, 1920, from a nest of *Nasutitermes* (*Nasutitermes*) *brevipilus* (Emerson).

Gasatomus gen. nov.

Consisting of the head and twenty segments.

Head completely covered by the collum. Fifth joint of antennae much exceeding the sixth in length.

Border of collum nearly horizontal; divided by radial furrows into twelve areas or lobes, with corresponding marginal notches or crenations. Collum within the border convex and strongly tubercular.

Keels of succeeding tergites of moderate length; presenting laterally three lobes or areas separated by sulci and corresponding marginal incisions excepting the fifth, which have but two lobes, and the seventeenth, eighteenth, and nineteenth, which have four. Each repugnatorial pore opening at the apex of a special and prominent process projecting laterad from the posterior lobe. Pores present on segments V, VII, IX, X, XII, XIII, XV and XVI. Posterior margin of keels incised.

Last tergite freely exposed; much exceeding the processes of the nineteenth keels; with six marginal lobes or crenations.

Second joint of legs longer than the third and than the sixth.

Genotype.—*G. emersoni* sp. nov.

Much suggesting *Cynedesmus*, a genus known from Central America, the West Indies, and the Canary Islands. From that genus it differs clearly in the lobation of the keels.

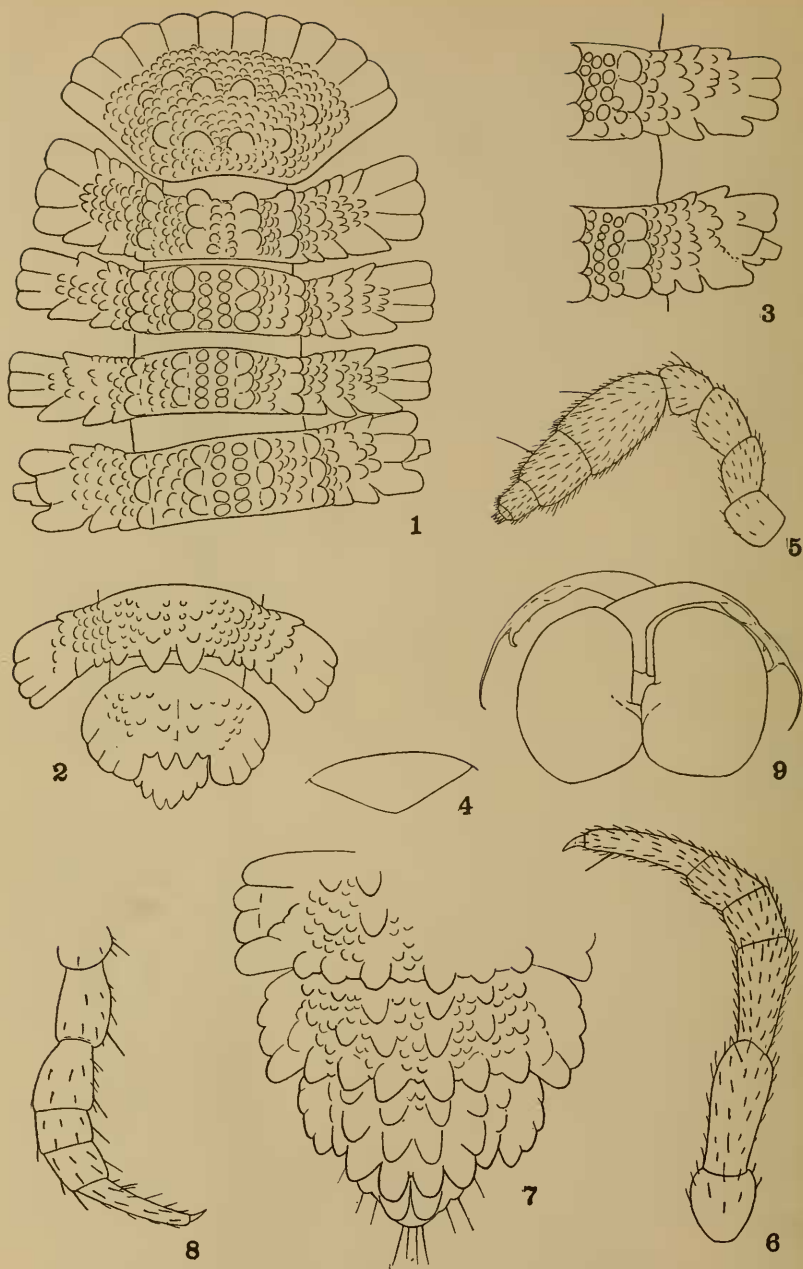


Plate XXVII.

GASATOMUS EMERSONI SP. NOV., *TIDOPTERUS SEQUENS* SP. NOV.

GASATOMUS EMERSONI.—1, anterior end, dorsal view; 2, caudal end, dorsal view; 3, eleventh and twelfth right keels, dorsal view; 4, anal scale; 5, antenna; 6, a leg.

TIDOPTERUS SEQUENS.—7, caudal end of body, dorsal view; 8, leg of eleventh segment; 9, gonopods of male, subventral view.

Gasatomus emersoni sp. nov.

(Plate XXVII, Figures 1 to 6)

Fulvous, appearing brown from adherent foreign material.

Vertex and frons of head densely granular; head smooth below level of antennae. Fifth joint of antennae about one and two-thirds times as long as thick, and not fully twice as long as the sixth article. (Pl. XXVII, fig. 5.)

Border of collum horizontal, its upper surface a little concave; the radial furrows sharply impressed and the corresponding marginal notches pronounced. Central portion of collum strongly convex and densely tubercular, with two transverse rows of larger tubercles as shown in pl. XXVII, fig. 1.)

The keels of the following tergites are trilobed laterally excepting those of the fifth, which are bilobed, and these of the seventeenth, eighteenth and nineteenth, which are four lobed. Caudal margin of keels with two principal lobes separated by narrow incisions, and a minor one proximad of these; the anterior margin with one distinct incision at base of the anterior lateral lobe. On the dorsum between the keels four longitudinal series of enlarged tubercles which greatly exceed the intervening ones in size, the three tubercles of each of these series on each tergite more or less confluent at base. Tubercles of the smaller size are also present on the keels excepting on the lateral lobes. The posterior tubercles of the two submedian principal series on the more caudal tergites are enlarged and project caudad from the plate. See further pl. XXVII, figs. 1 and 2.

Anal tergite with six small lobes or crenuli as shown in pl. XXVII, fig. 2. The anal scale broadly triangular, the caudal angle obtuse. (Cf. pl. XXVII, fig. 4.)

Form and proportions of joints of legs as shown in pl. XXVII, fig. 6.

Length, 7 mm.; width, 1.2 mm.

Locality.—British Guiana, Kartabo, Bartica District. Two females taken Aug. 30, 1920, from nest of *Nasutitermes* (*Subulitermes*) *baileyi* (Emerson).

Tidopterus gen. nov.

Composed of head and twenty segments.

Head nearly wholly covered by the collum from above. Fifth article of antennae but little longer than the sixth.

Border of collum divided by radial sulci and marginal notches into ten lobes.

Keels of succeeding tergites narrower than in *Gasatomus*, but the lateral margins lobed as in that genus, excepting that the sixteenth as well as the seventeenth, eighteenth, and nineteenth keels, has four marginal lobes. Pores present on segments V, VII, XI, X, XII, XIII, and XV. The pore processes as in *Gasatomus* as to form and position.

Nineteenth tergite with median caudal border bowed caudad beyond the caudal processes of keels, not forming the bottom of a quadrate excision between the latter. Last tergite exposed from above; bearing two large tubercles which conceal or nearly conceal it from above; margin not caudally incised at middle behind but with crenations, which are typically setiferous, on each side.

Second joint of legs not much differing in length from third, but both the second and third joints shorter than the sixth.

Telopodite of gonopods conspicuously exposed.

Genotype.—*Tidopterus sequens* sp. nov.

Related to *Cynedesmus* and *Gasatomus* but differing from both in lacking pores on the sixteenth segment and in the form of the nineteenth and twentieth tergites.

Tidopterus sequens sp. nov.

(Plate XXVII, Figures 7 to 9)

General color flavous.

Head with vertigial and frontal regions densely granular or finely tubercular on each side of the sulcus. The vertex of the head protrudes a little beyond the collum at the middle in

dorsal view. Fifth article of antennae nearly equal in length and thickness; not much longer than the narrower sixth article, the lengths of these articles being about as 5:4.

Border of collum nearly horizontal, narrow, the incisions between the lobes deep. Convex surface densely tubercular, with two transverse rows of larger, well separated tubercles.

Dorsum of the following tergites in general strongly convex and densely tubercular, with four principal longitudinal series of larger tubercles. These higher tubercles are proportionately larger on the more caudal tergites where those at caudal border project conspicuously caudad. The keels are obviously narrower than in the type of *Gasatomus*, showing but a single lobe on caudal margin; but the lateral lobation and the form and relations of the pore bodies are essentially the same as in that genus.

Anal tergite exposed in dorsal view but its margin concealed, or nearly concealed, in dorsal view by the two large, contiguous, caudally projecting and distally rounded tubercles which it bears. (Cf. pl. XXVII, fig. 7.) Anal scale triangular.

The telopodites of the gonopods of the male are comparatively large and conspicuous. They cross each other at the middle line, each passing in front of and curving back on the outside of the enlarged basal joint of the opposite gonopod. (Cf. pl. XXVII, fig. 9.)

Length, about 6 mm.

Locality.—British Guiana, Kartabo, Bartica District. One male taken, Dec. 18, 1919.